

REMARKS/ARGUMENTS

1. Claims 1, 2, 5-9, 11-13, 21-23, 26-30, 32-34, 41-43, 46-50, 52-54, and 62 are Patentable Over the Cited Art

The Examiner rejected claims 1, 2, 5-9, 11-13, 21-23, 26-30, 32-34, 41-43, 46-50, 52-54, and 62 as anticipated by Epstein (U.S. Patent No. 6,381,371). Applicants traverse for the following reasons.

Independent claims 1, 22, and 42 concern decompressing a compressed data stream whose decoded output comprises lines of two-dimensional data, comprising: receiving a compressed data stream; receiving at least one pointer to a location in the compressed data stream, wherein the decoded output of the compressed data stream comprises a location on a line of data; receiving decoding information for each received pointer that enables decoding from a point within the compressed data stream addressed by the pointer in one reentry data set, wherein the decoding information includes data from at least one line of the two dimensional data preceding the location on the line of data addressed by the pointer; for each received pointer, performing: (i) accessing the location in the compressed data stream addressed by the received pointer; and (ii) using the received decoding information including the data from the at least one line of the two dimensional data to decode compressed data from the accessed location.

In the first office action dated February 11, 2004 (First Office Action), the Examiner cited col. 7, lines 21-34 of Epstein as disclosing the claim requirement of receiving decoding information for each received pointer that enables decoding from a point within the compressed data stream addressed by the pointer in one reentry data set. (First Office Action, pg. 4)

In the previous Amendment dated June 11, 2004 ("Previous Amendment), Applicants traversed and noted that the cited col. 7 mentions that a minimal coded unit of pixels, i.e., an 8x8 block of pixels, contains a coefficient value for each color channel. The relative coefficient is used to reduce the size of the bit stream. The prescanner calculates an absolute coefficient for each color channel of the minimal coded unit. The calculated absolute coefficient value is the sum of the relative coefficient values.

Applicants argued that the cited DC coefficients of Epstein do not disclose or suggest the claim requirement that the decode information includes data from at least one line of the two dimensional data preceding the location on the line of data addressed by the pointer. The claims

require that the decoding information include the two-dimensional decoded data. The cited Epstein on the other hand discusses coefficients, which comprise transformed data or data in the transform domain, not the data from the lines of two dimensional data that is not coded.

In the Response to Arguments, the Examiner agreed that the cited Epstein teaches coefficients, but that the claim language does not exclude “coefficients” or “transformed data” as Applicants argued. The Examiner maintained that the claims did not require the actual data, but two-dimensional data. (Final Office Action, pg. 2) Applicants traverse.

The cited “two-dimensional data” comprises the unencoded two-dimensional data that is not coefficients or variables used to decode the data. Instead, the two-dimensional data is the data subject to coding and decoding, not variables used in the decoding process to decode the underlying two-dimensional data. The preamble of claims 1, 22, and 42 recites that the decoded output of the compressed data stream comprises lines of two-dimensional data. Thus, the claimed two dimensional data is not the coefficients used in performing the decoding, such as the DC coefficients of Epstein, but is instead the underlying data that results from the decode operation.

Moreover, the Application defines two-dimensional data as the underlying data that is subject to the coding and decoding. According to pg. 18, lines 21-25 of the Application:

Preferred embodiments were described with respect to decompressing still image data comprised of bits. In alternative embodiments, the data stream subject to the decoding/decompression techniques of the preferred embodiments may comprise other types of two dimensional data encoded on raster lines, such as scientific data, video data, masks, or any other data being compressed. It may also consist of non-two-dimensional data whose decoding depends upon previously decoded information.

Thus, the two-dimensional data comprises the underlying data subject to decoding, such as still image data or “other types of two dimensional data such as scientific data, video data”, etc.

The claim requirement that the decode information includes data from at least one line of the two dimensional data preceding the location on the line of data addressed by the pointer is not disclosed or taught in Epstein. The cited Epstein discusses coefficients, which comprise transformed data or data in the transform domain, not the two-dimensional data that is the subject of the encoding and decoding operations. The cited coefficients of Epstein instead comprise coefficients used in the decoding of the underlying two-dimensional data.

Applicants submit that the Examiner's findings that the two-dimensional data may include coefficients or transformed data is wrong because both the claim preamble and the Application define the two-dimensional data as the underlying data subject to encoding and decoding, which is different from the coefficients of Epstein used in the decoding operation.

The Examiner encouraged Applicants to amend the claims to include the argued features. (Final Office action, pg. 7). However, as discussed above, the argued distinction is already found in the existing claim language concerning the "two-dimensional data" and further amendment is not necessary.

Accordingly, Applicants submit that claims 1, 22, and 42 are patentable over the cited art because the cited Epstein does not disclose all the claim requirements.

Claims 2, 5-9, 11-13, 21, 23, 26-30, 32-34, 41, 43, 46-50, 52-54, and 62 are patentable over the cited art because they depend from one of claims 1, 22, and 42, which are patentable over the cited art for the reasons discussed above. Moreover, the following claims provide additional grounds of patentability over the cited art.

Claims 6, 27, and 44 depend from claims 5, 26, and 43 and further require generating the reentry data sets when decoding an input compressed data stream and outputting an output compressed data stream that comprises the compressed data decoded using the reentry data sets.

In the First Office Action, the Examiner cited col. 5, lines 1-11 as disclosing the claim requirement of generating the reentry data sets when decoding an input compressed data stream. (First Office Action, pg. 4). The cited col. 5 mentions a decoder that retrieves information stored in a prescan table to locate and decode encoded areas of the image.

In the Previous Amendment, Applicants explained that nowhere does the cited col. 5 anywhere disclose that reentry data sets are generated when decoding an input compressed data stream. In fact, the cited col. 5 teaches away from this requirement because col. 5 mentions processing the bit stream 8, which is the actual image data, and not an input compressed data stream as claimed.

In the Response to Arguments, the Examiner cited col. 5, lines 18 and 58 and found that bitstream 8 is an input compressed data stream that meets this limitation. (Final Office Action, pg. 3) The cited line 5, line 18 mentions that the bitstream 8 is transmitted in a compressed encoded data format and the cited line 58 mentions that the prescanner pre-processes the bitstream by decoding the bitstream to identify and locate each encoded image area.

Nowhere do these new cited lines of col. 5 anywhere disclose or mention that reentry data sets including the decoding information are generated when decoding a compressed data stream. The cited col. 5 mentions decoding a bitstream, but nowhere discloses that a reentry data set is generated, including a preceding line of two dimensional data.

Accordingly, claims 6, 27, and 44 provide additional grounds of patentability over the cited art.

Claims 11, 32, and 52 depend from claims 1, 22, and 42 and further require using previously decoded data to decode the compressed data stream. In the First Office Action, the Examiner cited col. 7, lines 20-34 of Epstein as disclosing the additional requirements of these claims. (First Office Action, pg. 5)

In the Previous Amendment, Applicants explained that the cited col. 7 discusses the coefficients that are calculated for data from the minimal coded unit, which may be used to decompress the data. However, the claims require the use of previously decoded data to decode the compressed data stream. The cited coefficients of Epstein comprise transformed data and not the decoded data subject to the decoding operation using the coefficients.

In the Response to Arguments, the Examiner repeated the above discussed argument that the "actual" decoded data is not recited in the claim. The Examiner further found that FIG. 2 of Epstein discloses this requirement because to prescanner 210 of Epstein decodes the data to create the bitstream location information. (Final Office Action, pg. 4) Applicants submit that the cited FIG. 2's discussion of creating bitstream location information when decoding the data does not disclose the claim requirement of using previously decoded data to decode the compressed data stream. The cited location information does not comprise previously decoded data as claimed, but instead comprises a location of an encoded image area.

Accordingly, claims 11, 32, and 52 provide additional grounds of patentability over the cited art.

Claims 12, 33, and 53 depend from claims 11, 32, and 52 and further require that the previously decoded data used to decode the compressed data stream is included in the reentry data sets.

In the First Office Action, the Examiner cited col. 7, lines 30-31 of Epstein as disclosing the additional requirements of these claims. (Office Action, pg. 5) In the Previous Amendment, Applicants noted that the cited col. 7 mentions that the coefficients are stored to remove any

dependency on previous minimal coded units in the bit stream. Nowhere does the cited col. 7 anywhere disclose or mention that the reentry data sets include previously decoded data. In fact, the cited col. 7 teaches the opposite because Epstein mentions that the coefficients are stored to remove dependency on previous of the minimal coded units, which is the original image data. However, the claims require that previously decoded data is included in the reentry data sets, which means the reentry data sets have dependency on previous data in the lines, which is the opposite of what Epstein mentions.

In the Response to Arguments, the Examiner responded that the prescan table 225 of FIG. 2 discloses that the reentry data sets include decoded data. (Final Office Action, pg. 5) Applicants traverse.

Epstein mentions that the prescanner stores location information in the prescan table 225 that includes an offset into the bitstream that indicates the starting location in the bitstream of the encoded image area. (Epstein, col. 5, lines 55-67). Nowhere does this cited Epstein anywhere disclose that the reentry data sets include decoded data. Instead, the cited prescan table has location information of an offset into the bitstream, which is different from the claimed previously decoded data.

Accordingly, claims 12, 33, and 53 provide additional grounds of patentability over the cited art.

The Examiner rejected claims 14-20, 35-40, and 55-61 as obvious (35 U.S.C. §103) over Epstein in view of Slattery ("The Qx-coder", IBM Journal of Research and Development, Vol. 42, No. 6, 1998, by M. J. Slattery and J.L. Mitchell). Applicants traverse for the following reasons.

In the First Office Action, the Examiner found that the teachings of Epstein may be modified with Slattery, such that Slattery's ABIC lines of nearby data and probability estimates used in ABIC to decode data could be used by Epstein in lieu of the JPEG absolute coefficient values. (First Office Action, pg. 8) Applicants traverse.

In the Previous Amendment, Applicants cited the Manual of Patent Examination and Procedure ("MPEP") rule that "[i]f proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." MPEP, Sec. 2143.01, p. 2100-127 (8th Ed., Rev. Feb. 2003).

In the First Office Action, the Examiner proposed that the history data used in ABIC to decode data, such as the nearest seven bits of data, be substituted for the absolute coefficients used in JPEG decoding. Applicants argued in the Previous Amendment that it is improper to make such a modification because the JPEG decoder algorithm described in Epstein would be inoperable if one were to substitute the DC coefficients used by the JPEG algorithm with the seven nearby pels of image data used in the ABIC algorithm. The JPEG algorithm requires the use of specifically transformed data, such as the DC coefficients that are in a transform domain, to successfully decode data. Substituting nearby pel data, which is used in ABIC, with the JPEG coefficients would cause the JPEG algorithm of Epstein to be inoperable because the algorithm expects the specific DC coefficients in the transform domain, not nearby pixels such as used in ABIC.

Applicants noted that it is improper to modify Epstein's JPEG algorithm to use nearby pixel data, as shown in Slattery, because such modification would render Epstein's JPEG algorithm unsatisfactory for its intended purpose – Epstein's JPEG algorithm would not work and decode data with the nearby pixels and other ABIC specific data, as shown in Slattery.

In the Response to Arguments, the Examiner recognized that "Epstein's JPEG teachings were physically **incompatible** with Slattery's ABIC teachings" (emphasis added), but then took the position that this incompatibility would suggest to one skilled in the art to modify "Epstein's teachings to accommodate Slattery's ABIC teachings." (Final Office Action, pg. 6) Applicants submit that this finding is inconsistent because if the teachings are "physically incompatible" as the Examiner recognizes, then one skilled in the art could not modify Epstein to use Slattery's ABIC variables if, as both Applicants and the Examiner agree, the JPEG algorithm would be inoperable if it tried to use ABIC decoding variables, such as previous history data. The Examiner's findings directly contradict the above cited rule in the MPEP that [i]f proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." Thus, those skilled in the art would not be motivated to modify the JPEG algorithm to use the history data of ABIC because such a modification would render Epstein's JPEG algorithm, which requires and expects transformed data, such as DC and AC coefficients, inoperable.

Accordingly, claims 14-20, 35-40, and 55-61 provide additional grounds of patentability over the cited art.

On pages 7-17 of the Final Office Action, the Examiner repeated the rejections in the First Office Action. Applicants incorporate herein the arguments in the Previous Amendment that traverse the findings in the First Office Action incorporated into the Final Office action.

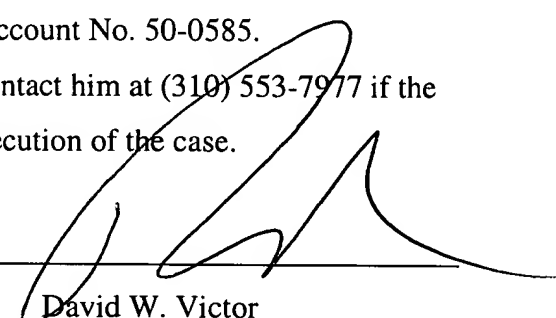
Conclusion

For all the above reasons, Applicant submits that the pending claims 1-62 are patentable over the art of record. Applicants submit that no additional fees are needed. Nonetheless, should any additional fees be required, please charge Deposit Account No. 50-0585.

The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

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